

# Exhibit 9

# **FIBER OPTICS STANDARD DICTIONARY**

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metic operations, and (c) requires two to three times as many combinational circuits as the conventional binary adder. *Synonym* **Lucal code**. *See also* **code, combinational circuit, error detection, parity bit**.

**modular:** 1. Pertaining to the design concept in which interchangeable units are used to create an assembled functional unit. *Note:* Fiber optic transmission systems are primarily modular systems. Modules include fiber optic couplers, fiber optic receivers, fiber optic repeaters, and fiber optic transmitters. 2. Pertaining to the composition of a system by means of assembled and interconnected modules, usually each of which can be individually replaced. *See also* **fiber optic coupler, fiber optic receiver, fiber optic repeater, fiber optic transmitter, functional unit, module**.

**modular decomposition:** The designing of a system by (a) subdividing it into separate components or modules, (b) designing each component or module separately with due consideration being given to the interfaces between them, and (c) interconnecting the components or modules. *See also* **component, hierarchical decomposition, interconnection, interface, module**.

**modularity:** The extent to which a system or a functional unit is composed of discrete interconnected hardware or interrelated software components or modules. *Note:* An optimum level of modularity allows for improved installation, operation, testing, and maintenance flexibility. *See also* **component, discrete, functional unit, hardware, interconnection, module, software**.

**modular jack:** A device that conforms to the *Code of Federal Regulations*, Title 47, part 68, that defines the size and configuration of all units that are permitted for connection to the public exchange facilities, i.e., public switched network facilities. *See also* **configuration, connection, exchange, public switched network**.

**Modular Measurement System:** An industry standard that (a) is controlled by a consortium led by test and measurement (T&M) manufacturers, (b) is specially suited for microwave, radio frequency, and lightwave systems testing, and (c) allows tailored architectures of equipment for T&M. *See also* **industry standard, lightwave, microwave, radio frequency, standard, test and measurement activity, test**.

**modular spread spectrum code sequence generator:** In spread spectrum systems, a spread spectrum code sequence generator in which each flip-flop in the code sequence register is followed by a modulo-two adder. *See also* **code sequence generator, code sequence register, flip-flop, modular, module, modulo, spread**

**spectrum, spread spectrum code sequence generator**.

**modulate:** 1. To vary a characteristic or parameter of an entity in accordance with a characteristic or parameter of another entity, such as (a) to vary the irradiance, i.e., the intensity, of a beam from a light source, such as a laser, in accordance with an intelligence-bearing electronic signal applied to the source or (b) to vary the radiant power at a point in a waveguide, such as an optical fiber, in accordance with a physical variable being sensed or measured, such as in a microbend sensor or a Sagnac fiber optic sensor. 2. To vary any property, characteristic, or parameter of a wave, such as amplitude, phase, frequency, pulse position, or pulse duration, usually for the purpose of transferring information. *Note 1:* A wave can be modulated by superimposing another wave or by varying a physical parameter to which the wave is sensitive, such as by varying attenuation in an optical fiber or controlling the output of a laser by varying the driving voltage. *Note 2:* Modulation in an uncontrolled or random manner creates noise or interference. 3. To vary a characteristic of a carrier in accordance with an information-bearing signal. *See also* **amplitude, attenuation, beam, carrier, characteristic, demodulate, demodulation, entity, frequency, information-bearing signal, interference, irradiance, Kerr effect, laser, microbend sensor, modulation, noise, optical fiber, parameter, phase, pulse duration, pulse duration modulation, pulse position modulation, radiant power, Sagnac fiber optic sensor, signal, voltage, waveguide**. *Refer to* Fig. I-1.

**modulated signal:** The signal that results when a carrier is modulated by a signal, such as when a carrier is modulated by an information-bearing signal. *Note:* Examples of modulated signals are the signals that result when (a) a sine wave carrier is modulated by a baseband signal or (b) a continuous lightwave from a laser is modulated by an optical modulator. *See* **baseband signal, carrier, information-bearing signal, laser, lightwave, modulate, optical modulator, pulsed frequency modulated signal, signal, sine wave**.

**modulating signal:** The signal, such as an information-bearing signal, that is used to modulate a carrier. *See also* **baseband signal, carrier, information-bearing signal, modulated signal, modulation**.

**modulation:** 1. The controlled or uncontrolled variation of a characteristic or parameter of an entity in accordance with a characteristic or parameter of another entity, such as (a) a controlled variation of any property of a wave for the purpose of transferring information or (b) the random fluctuation of a signal caused by a

lightning strike on a communications line. 2. In communications systems, such as fiber optic transmission systems, the process, or the result of the process, of varying a characteristic of a carrier in accordance with an information-bearing signal. 3. The controlled variation of a parameter, such as amplitude, phase, frequency, pulse position, or pulse duration, of a wave usually for the purpose of transferring information. *Note 1:* Modulation can be accomplished by superimposing another wave or by varying a physical parameter to which the wave is sensitive, such as by varying attenuation in an optical fiber or controlling the output of a laser by varying the driving voltage. *Note 2:* Uncontrolled or random modulation is considered to be noise or interference. *Note 3:* Examples of modulation are (a) variation of the amplitude or frequency of a carrier in accordance with an analog signal, such as a voice or video signal, (b) variation of the irradiance, i.e., the intensity, of a lightbeam from a light source, such as a laser, in accordance with an information-bearing electronic signal applied to the source, and (c) variation of the radiant power at a point in a waveguide, such as an optical fiber, in accordance with a physical variable being sensed or measured, such as in a microbend sensor or a Sagnac fiber optic sensor. *See* absorption modulation, absorptive modulation, adaptive differential pulse code modulation, amplitude modulation, analog intensity modulation, analog modulation, angle modulation, balanced amplitude modulation, balanced modulation, binary modulation, conditioned di-phase modulation, constant current modulation, continuously variable slope delta modulation, continuous phase modulation, cross modulation, delta modulation, delta sigma modulation, demodulation, delay modulation, differential modulation, differential pulse code modulation, differential trellis coded modulation, digital frequency modulation, digital modulation, digital phase modulation, direct sequence modulation, double modulation, electrooptic phase modulation, external optical modulation, final modulation, fixed reference modulation, frequency code modulation, frequency hopping direct sequence modulation, frequency modulation, full modulation, incremental phase modulation, intensity modulation, intermodulation, isochronous modulation, jammer modulation, jamming modulation, low-level modulation, mechanically induced modulation, multilevel modulation, nonreturn to zero (change) modulation, nonreturn to zero (change on ones) modulation, 100% modulation, percentage modulation, phase modulation, polarization modulation, pulse amplitude modulation, pulse code modulation, pulse duration modulation, pulse interval modulation, pulse modulation, pulse position modulation,

pulse time modulation, quadrature amplitude modulation, quadrature modulation, reference modulation, start-stop modulation, subband adaptive differential pulse code modulation, suppressed clock pulse duration modulation, synchronous demodulation, telegraph modulation, trellis coded modulation, wavelength modulation. *See also* amplitude, carrier, demodulate, demodulation, frequency, information-bearing signal, irradiance, laser, light-beam, microbend sensor, modulate, optical fiber, phase, pulse duration, pulse position modulation, Sagnac fiber optic sensor, waveguide. *Refer to* Fig. M-2. *Refer also to* Figs. N-13, P-12. *Refer to* Appendix B, Tables 1, 2.

**modulation-demodulation linearity:** A measure of the presence or absence of harmonics of the frequency of the modulating signal in the signal that results from the modulating or demodulating process, such as the electrical output signal of a fiber optic link or fiber optic loop. *See also* fiber optic link, fiber optic loop, harmonic, information-bearing signal, modulate, modulating signal, modulation, output, signal.

**modulation domain:** 1. Pertaining to the spectrum of electronic and optical equipment that are devoted to measuring the characteristics of modulated waves. 2. The entire realm of modulation, including (a) the array of modulation equipment, such as modulators and demodulators, (b) the generation, transmission, and reception of modulated waves, including radio waves, video signals, and lightwaves, and (c) the measurement of the characteristics and parameters of modulated waves. *See also* demodulator, lightwave, modulate, modulation, modulator, parameter, radio wave, reception, transmission, video signal.

**modulation factor:** 1. In amplitude modulation, the ratio of (a) the peak variation actually used, i.e., the maximum peak-to-trough value that occurs in a given signal, such as an optical signal in an optical fiber, to (b) the maximum design variation, i.e., the maximum peak-to-trough value the system is designed to allow. *Note:* In conventional amplitude modulation (AM), the maximum design variation is considered to be that for which the instantaneous amplitude of the modulated signal reaches zero. When zero is reached, the modulation factor is 100%. 2. In an amplitude-modulated electromagnetic wave, the ratio of (a) the difference between the maximum amplitude and the minimum amplitude to (b) the maximum amplitude. *Note:* As the modulation factor is increased to where the modulated signal value reaches zero, the modulation factor is unity, i.e., the modulation is 100%. Attempts at modulation beyond this point will result in signal distortion. 3. In a frequency-modulated electromagnetic wave, the ratio

**optical spectrum, radiation, radio, wavelength, X-ray.** *Refer to Appendix B, Table 5.*

**optical range:** 1. The direct line-of-sight distance between two points at given altitudes above the surface of the Earth. 2. The range that is achieved by a straight line from one point above the Earth surface to another point above the Earth surface and tangent to the Earth surface at one point in between. *Common abbreviation: OR.* *See also optical link, range.*

**optical ray:** In geometric optics, at a point, a representation of the magnitude and the direction of propagation of electromagnetic radiation as defined by radiation parameters. *Note:* A ray is perpendicular to a wavefront and is in the direction of the Poynting vector at each point in a propagation medium. *See also electromagnetic radiation, geometric optics, parameter, Poynting vector, propagation, propagation medium, radiation, ray, wavefront.*

**optical reader:** A device that (a) is capable of sensing, interpreting, and transmitting encoded handwritten, typed, or printed characters by being able to distinguish their shape as a distinct pattern of light areas, i.e., reflective areas, and dark areas, i.e., nonreflective (absorptive) areas, for each character, on a data medium. *Note 1:* Examples of optical readers are (a) facsimile optical scanners, (b) the reader in optical character recognition equipment used for computer input, and (c) the device that reads the data on an optical disk. *Note 2:* Scanning and transmitting an image, such as in facsimile, radiophoto, and phototelegraphy systems, whether in electronic or fiber optic transmission systems, is not considered as optical reading. *See also absorption, character, facsimile, fiber optic transmission system, image, light, optical character reader, optical character recognition, optical disk, optical scanner, phototelegraphy, radiophoto, reflection, scan, scanner, scanning, sensing, transmit, transmission.*

**optical reading head:** A device that (a) uses a light-beam to scan an object, (b) produces a reflected or transmitted lightbeam, i.e., an optical signal, that has an optical power level proportional to the point-by-point reflectivity or transmissivity of the object, and (c) produces an output electronic signal proportional to the intensity of the reflected or transmitted lightbeam. *See also electronic signal, intensity, level, lightbeam, object, optical power, optical scanner, optical scanning, optical signal, reflection, reflectivity, transmissivity, transmit.*

**optical receiver:** A device that (a) detects optical signals, (b) converts them to electronic signals, and (c) processes the electrical signals for subsequent use. *See*

*also electronic signal, fiber optic receiver, fiber optics, optical signal, optical transmitter, photodetector, signal, signal processing. Refer to Figs. C-7, F-6, L-9.*

**optical receiver maximum input power:** The maximum input optical power (dBm) (a) that is received at an optical receiver, measured, using specified standard procedures, at the line side of the receiver fiber optic connector when operated under standard or extended operating conditions and (b) that the receiver will accept and still (i) not exceed the manufacturer specified bit error ratio (BER) in digital systems or (ii) operate in a linear nonsaturated mode, i.e., less than 100% modulation, in analog systems. *See also analog, bit error ratio, digital, extended operating condition, fiber optic connector, fiber optic receiver, line side, one hundred percent modulation, optical power, optical receiver, standard operating condition.*

**optical reflection:** *See maximum optical reflection.*

**optical regenerative repeater:** *Synonym optical repeater.*

**optical regenerator:** *Synonym optical repeater.*

**optical repeater:** An optoelectronic device or module that receives optical signals, amplifies the signals, or, in the case of digital signals, also reshapes, retimes, or otherwise reconstructs them, and retransmits the signals as optical signals that represent the same information as the input signals. *Note:* The optical repeater is inserted at a point in a propagation medium, such as a long fiber optic cable or a stage in an optical integrated circuit (OIC), to overcome the effects of attenuation and dispersion. *Synonyms optical regenerative repeater, optical regenerator. See also amplify, attenuation, dispersion, fiber optic cable, fiber optic repeater, fiber optics, module, multiport repeater, optical integrated circuit, optical signal, optoelectronic device, propagation medium, signal, signal processing, transmit.*

**optical repeater power:** 1. In optical systems, the power (electrical, optical, or both) required to operate an optical repeater. *Note:* Optical repeater power may be delivered to the repeater by various means, such as (a) an electrical conductor in the cable that also contains the optical waveguides, i.e., a hybrid cable, (b) a separate electrical wire or cable, (c) a solar cell, (d) a local battery, primary or secondary, such as a seawater battery, (e) an electrical power system local power outlet, (f) an optical power cable separate from the optical signal cable or a fiber optic bundle in the same cable with the signal waveguides, or (f) a tap of the signal power contained in the optical signals fibers without

**frequency characteristic, phase nonlinearity, phase shift, signal.**

**phase lock:** The condition that exists when two signals, including optical signals, maintain a constant phase relationship with each other. *Note 1:* One of the signals may be a reference signal, such as a clock output signal. *Note 2:* If two signals maintain phase lock, their frequencies are exactly equal. *Note 3:* Phase lock between two signals does not imply that their phase difference is zero. If their phase difference remains within a specified range, the signals may still be considered to be phase locked. *Note 4:* If phase lock is maintained between two signals, the signals are in synchronism. *Note 5:* Phase lock, usually with a clock pulse, is used in synchronous systems. *See also* clock, clock pulse, frequency, frequency lock, optical signal, phase, phase difference, phase-locked loop, signal, synchronism, synchronous, synchronous optical network.

**phase-locked loop:** 1. An electronic circuit that (a) controls an oscillator so that it maintains a constant phase angle relative to a signal from a reference signal source, (b) is used in situations in which signals that are shifted in phase with respect to one another can maintain a fixed phase relationship, (c) in spread spectrum systems, is used to cause an oscillator internal to the feedback loop to oscillate at the incoming carrier frequency, (d) has a feedback circuit, i.e., a servoloop, that uses the output of a phase-sensitive detector, via a low-pass filter, to control the frequency of its own reference signal, (e) has a feedback loop that is damped to permit tracking of the carrier phase shifts at the input, but does not permit tracking of the modulation changes, and (f) provides a low noise threshold. *Common abbreviation:* PLL. 2. A circuit for synchronizing a variable local oscillator with the phase of a transmitted signal. *Note:* Phase-locked loops (PLLs) are widely used in synchronous optical networks (sonets) and in space communications for coherent carrier tracking and threshold extension, bit synchronization, and symbol synchronization. *Synonym* phase lock loop. *See also* carrier, carrier frequency, carrier synchronization, circuit, coherent, Costas loop, digital phase-locked loop, false clock, feedback, feedback loop, low-pass filter, oscillator, phase, phase angle, phase detector, phase shift, signal, spread spectrum, synchronous optical network, Synchronous Optical Network standard, threshold.

**phase lock loop:** *Synonym* phase-locked loop.

**phase measurement tolerance:** The maximum allowable difference between a measured phase value and the actual phase value. *See also* error, phase, phase difference, value.

**phase meter:** An instrument that may be used for measuring and indicating the phase difference between two alternating quantities that have the same frequency. *See also* frequency, optical time domain reflectometry, phase, phase difference.

**phase modulation:** Angle modulation in which the phase angle of a carrier, such as an electronic, radio, or optical carrier, is caused to depart from its reference value by an amount proportional to the instantaneous value of the modulating signal. *Common abbreviation:* PM. *See also* angle modulation, carrier, continuous phase modulation, deviation ratio, differential phase-shift keying, frequency modulation, modulation index, optical carrier, phase, phase deviation, phase difference, phase-frequency distortion, signal, value.

**phase modulator:** *See* optical phase modulator.

**phase noise:** Relative to a fixed reference or relative to the mean phase position, rapid, short-term, random departures in the phase of a wave, such as an electronic wave, radio wave, or lightwave, caused by time domain, i.e., temporal, instabilities in circuit elements, such as those of an oscillator. *Note:* Phase noise power,  $N_p$ , in dB relative to carrier power (dBc) with a 1-Hz (hertz) bandwidth, is given by the relation  $N_p = 10 \log 0.5(S_p)$  where  $N_p$  is the phase noise power and  $S_p$  is the normalized spectral density of the phase departures. *See also* bandwidth, carrier, carrier power, circuit, circuit element, circuit noise level, lightwave, noise, noise power, oscillator, phase, phase departure, phase jitter, spectral density, time domain.

**phase nonlinearity:** In the phase-frequency characteristic, i.e., phase versus frequency characteristic, of a circuit or device, the condition that exists when the phase shift for each frequency in the input signal, such as that of a light wave, a radio wave, or a microwave, introduced by a circuit is not directly proportional to that frequency in the input signal, i.e., the phase versus frequency characteristic is not a straight line with a positive slope, or, if it is a straight line with proper positive slope, it does not pass through the origin. *Note 1:* Distortion will occur because the phase shifts for the different frequencies are not proportional to the frequencies in the input signal. As a result, the phase relationships in the input signal will not be preserved by the circuit. Hence, the phase relationships in the output signal will not be the same as they were in the input signal. *Note 2:* A circuit has phase linearity if the phase shift for each frequency in the input signal is proportional to that frequency, i.e., the phase-frequency characteristic (phase versus frequency characteristic) is a straight line through the origin and with

the boundary where there is a sudden transition from light to dark. *Note 3:* Tailing does not apply to the reproduction of details that are smaller than the picture element and that may be deliberately prolonged at the transmitter. *Synonym* hangover. *See also* electronic signal, facsimile, level, optical signal, picture element, signal level, significant condition, transition, transmitter.

**takeoff angle:** *Synonym* departure angle.

**talbot:** In the meter-kilogram-second (MKS) system of units, a unit of luminous energy equal to 10 million lumergs and equal to  $1 \text{ L} \cdot \text{s}$  (lumen  $\cdot$  second). *See also* lumen, luminous energy, luminous intensity, luminous power.

**talk:** *See* crosstalk.

**talker:** *See* mean power talker, medium power talker.

**talker volume distribution:** *See* mean power of the talker volume distribution.

**tandem:** 1. Pertaining to an arrangement or sequencing of networks, circuits, or links, in which the output terminals of one network, circuit, or link are connected directly to the input terminals of another network, circuit, or link. *Note:* An example of a tandem connection is several fiber optic links connected in series. 2. The connection of a group of entities in series, as in a chain. *Synonym* catenation. *See also* cascading, chain, circuit, concatenation, fiber optic circuit, fiber optic link, fiber optic loop, fiber optic net, link, network.

**tandem center:** In communications systems, an installation in which switching equipment (a) connects trunks to trunks, such as fiber optic trunks, and (b) does not connect to any loops, such as fiber optic loops. *See also* end office, exchange, extension facility, fiber optic loop, fiber optic trunk, loop, switching center, switching equipment, tandem tie trunk network, trunk.

**tandem data circuit:** A data circuit that contains more than two sets of data circuit-terminating equipment (DCE) in series, i.e., in tandem. *See also* circuit, data circuit, data circuit-terminating equipment, fiber optic data link, tandem.

**tandem exchange:** *Synonym* tandem switch.

**tandem office:** A central office (C.O.) used as an intermediate switching point for traffic between COs. *Common abbreviation:* TO. *See also* central office, intermediate station, intermediate switchboard, point, switching, traffic.

**tandem switch:** A manual or automatic switch that connects the output terminals of the circuits of one trunk, such as a fiber optic or electrical trunk, to the input terminals of the circuits of another trunk, thereby connecting both trunks in series, i.e., in tandem. *Synonym* tandem exchange. *See also* circuit, fiber optic intermediate station, intermediate switchboard, trunk, switch, tandem, trunk.

**tandem tie trunk network:** A network arrangement that (a) permits the sequential connection of tie trunks, including fiber optic trunks, between private branch exchange (PBX) locations by using tandem operation and (b) permits two or more dial tie trunks to be connected together at a tandem center location to form a through connection. *Common abbreviation:* TTTN. *See also* connection, fiber optic trunk, private branch exchange, switching center, tandem center, tie trunk, trunk.

**tangential coupling:** The coupling of signals from one dielectric waveguide to another, such as one optical fiber to another, by placing or fusing the core of the waveguide containing the signal in proximity for a short distance to another core to allow some of the signal power to leak or spill over to the attached fiber. *Note:* The degree of coupling is determined by the core-to-core spacing and the length of coupling. Tangential coupling makes use of the evanescent waves that are bound to the waves in the optical fiber but are propagating on the outside of the fiber. *Synonym* pick-off coupling. *See also* bound mode, butt coupling, core, coupling, dielectric waveguide, evanescent field coupling, evanescent wave, fiber optic coupler, guided ray, lapping, loose tube splicer, optical fiber, optical fiber cladding, optical fiber core, optical signal, propagate, signal.

**tank:** *See* cable tank.

**tap:** 1. To draw energy from a circuit. 2. To remove a part of the signal energy from a line, such as a wire, coaxial cable, or an optical fiber. *Note:* Tapping may be authorized for purposes of establishing a signal line, or it may be clandestine, though clandestine tapping of optical fiber is difficult to accomplish and easily detected. 3. The physical connection to a signal line that removes part of the signal energy in the line. *Note:* Examples of taps are branches, couplers, and induction coils. 4. To monitor, with or without authorization, the information that is being transmitted in a communications circuit. 5. In fiber optic systems, a device for extracting a portion of the optical signal from an optical fiber. *See also* branch, circuit, coaxial cable, coupler, coupling, detection, energy, fiber optic coupler, fiber



fiber optic net, interface, network, network management, orderwire, telecommunications management.

**Telecommunications Management Network standard:** A standard that (a) is designed for management of telecommunications networks, (b) was developed by the International Telecommunication Union, (c) is based on the Open Systems Interconnection—Reference Model, (d) is described in the standard designated as ITU-T M.3010. *Common abbreviation:* TMN standard. *See also* International Telecommunication Union, network management, Open Systems Interconnection—Reference Model, standard, telecommunications network.

**telecommunications network:** All the lines and equipment that (a) provide telecommunications services among geographic locations that are widely distributed and (b) consists of at least end instruments, loops, switching centers, and trunks. *See* all-optical telecommunications network, civil telecommunications network, military telecommunications network. *See also* communications network, end instrument, fiber optic link, fiber optic loop, fiber optic trunk, switching center, telecommunications system.

**telecommunications private operating agency:** A private agency that (a) operates a telecommunications service, facility, network, or system and (b) generates signals that must be coordinated with the signals generated by the systems operated by other agencies. *Common abbreviation:* TPOA. *See also* interface, network, optical signal, recognized private operating agency, signal, telecommunications service.

**telecommunications radio service:** *See* basic exchange telecommunications radio service.

**telecommunications resources board:** *See* Joint Telecommunications Resources Board.

**telecommunications security:** Communications security applied to telecommunications systems, facilities, equipment, and components, including fiber optic facilities, equipment, and components. *See also* communications security, component, fiber optic equipment, secure communications.

**telecommunications service:** A service that (a) includes a specified set of information transfer capabilities, (b) is provided to a group of users by a telecommunications system, (c) holds the user responsible for the information content of the transmitted messages, and (d) is responsible for the acceptance, transmission, and delivery of messages. *See* consolidated local telecommunications service, information content, interexchange carrier, message, public switched National Security or Emergency Preparedness (NS/EP) tele-

communications service, service, transfer, transmission, user, wide area telecommunications service.

**Telecommunications Service Priority Service:** A regulated service provided by a telecommunications service provider, such as an operating telephone company or a common carrier, for National Security or Emergency Preparedness (NS/EP) telecommunications. *Common abbreviation:* TSP Service. *Note:* The Telecommunications Service Priority (TSP) service replaced Restoration Priority (RP) service effective September 1990. *See also* common carrier, National Security or Emergency Preparedness telecommunications, telecommunications service.

**Telecommunications Service Priority System:** A system that provides a means for telecommunications users to obtain priority treatment from telecommunications service providers for the National Security or Emergency Preparedness (NS/EP) telecommunications requirements. *Common abbreviation:* TSP System. *Note:* The Telecommunications Service Priority (TSP) System replaced the Restoration Priority (RP) system effective September 1990. *See also* National Security or Emergency Preparedness telecommunications, telecommunications service, user.

**Telecommunications Service Priority System user:** Any individual, organization, or activity that interacts with the National Security or Emergency Preparedness (NS/EP) Telecommunications Service Priority (TSP) System. *Common abbreviation:* TSP System user. *See also* National Security or Emergency Preparedness telecommunications, National Security or Emergency Preparedness Telecommunications Service Priority System, user.

**telecommunications standard:** *See* Federal Telecommunications Standard.

**telecommunications system:** A system that (a) is used for communications among points separated by distances so great that extended communications facilities or systems are required, (b) has capabilities beyond those of a single communications system, (c) may be composed of several communications systems or networks, such as fiber optic nets, (d) is delimited by a set of functional interface points that allow access to the system by users, (e) performs the basic communications system functions of acceptance, transmission, and delivery of messages, or handling of calls, and (f) performs functions over global distances. *See* Federal Telecommunications System, terrestrial telecommunications system, Universal Mobile Telecommunications System. *See also* access, call, communications system, facility, fiber optic net, function, interface, message,